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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/153,831	09/15/1998	STEVEN J. EBERBACH	94-906CIP	6100

7590 12/29/2004
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EXAMINER	
LEE, PING	
ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/153,831

Applicant(s)

EBERBACH, STEVEN J.

Examiner

Ping Lee

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 5-10 is/are rejected.
- 7) ☒ Claim(s) 3, 4 and 11-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings were received on 7/8/04. These drawings are approved.

Claim Rejections - 35 USC § 112

2. Claims 5, 6, and 13-16 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 1 and 2 are the two independent claims directed to embodiment as disclosed in Figs. 12s, 37 and 38. This embodiment involves only one loudspeaker. Claims 5, 6 and 13-16 specify an invention having more than one loudspeakers. Therefore, claims 5, 6 and 13-16 fail to further limit the subject matter of claim 1 or 2.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gefvert (US 5,533,129) in view of Greenberger (US 5,870,484).

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Regarding claims 1, 2, 9 and 10, Gefvert discloses a sound reproduction system comprising a loudspeaker (10) having at least two drivers (72 and 76). At least two channels (left and right) from an electronic signal source (78), each of the channels associated with the creating of each of the sound fields. Although not clearly shown, each sound field has maxima and minima, and the sound fields are inherently superimposed over an angle symmetrically located between the sound fields' maxima or minima. Since Gefvert does not teach that the driver 72 and driver 76 are different from each other, so the drivers are the same and the amplitude gradient of each sound field versus angle being inherently complementary to the amplitude gradient of the other sound field. Gefvert fails to show the sound field's maximum and minimum less than 180° apart.

Greenberger teaches a loudspeaker with a directivity pattern adjusted by the delay causing the sound field having maximum and minimum less than 180° apart. See the first column of Fig. 3 and fourth column of Fig. 12. By adjusting the levels, the user can adjust the directivity of the loudspeaker based on the room conditions, program material variations and his/her preference (col. 17, lines 59-67). Thus, it would have been obvious to one of ordinary skill in the art to modify Gefvert by adjusting the levels to the drivers as taught in Greenberger in order to adjust the directivity pattern of the stereophonic sound imaging based on the room conditions, program material variations and user's preference.

Regarding claims 7 and 8, Greenberger teaches that the directional patterns are retained over at least two octaves (col. 24, lines 24-67).

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Regarding claims 5 and 6, Gefvert fails to show a plurality of loudspeakers. Greenberger teaches such a placement in Figs. 18a and 18b for adding spacious sound effect by the reflection from the walls (col. 83, lines 21-55). Thus, if cost is not a concern, it would have been obvious to one of ordinary skill in the art to modify Gefvert by placing additional loudspeaker as taught Greenberger in order to simulating a spacious sound imaging.

Allowable Subject Matter

5. Claims 3, 4 and 11-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

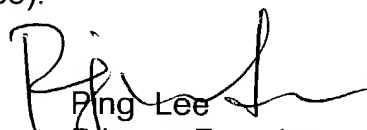
6. Applicant's arguments with respect to claims 1 and 2 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 703-305-4865. The examiner can normally be reached on Monday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ping Lee
Primary Examiner
Art Unit 2644

pwl